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and coolly put his foot into it. He was there next day, full of wrath, and a bullet put an end to his existence.

H. J. T.

#### Millerite.

I wish to place on record the occurrence of the mineral millerite in the Keokuk beds of the subcarboniferous rock of Iowa. I have just received a few specimens of rock blasted out when the government was deepening the channel at the 'rapids' in the Mississippi, above Keokuk, some years ago. The specimens show cavities in the limestone, partially filled with calcite crystals, mostly of the scalenohedral form. In some instances these crystals carry very beautiful thread-like crystals of millerite. They are usually aggregated in the form of cones, the apices of which are almost solid on account of the threads being so close together, while at the bases of the cones they are much farther apart.

The occurrence seems to be in every way similar to the occurrence of the same mineral at St. Louis, Mo. A few small crystals of tetrahedral chalcopyrite are also present.

ERASMUS HAWORTH.

Penn college, Oskaloosa, Jo., Oct. 9.

#### Alligators in the Bahamas.

Catesby, in his 'Natural history of Carolina, Florida, and the Bahama Islands,' published about a century ago, speaks of having seen alligators on the Island of Andros in this group. At present there are none, and, with the object of finding out if there was any tradition current bearing upon the subject, I made inquiries through the medium of the *Nassau guardian*. In answer to my questions, I lately received from the rector of Inagua, at the extreme south-east of the group, a letter, in which he mentions that stories of alligators having been drifted on logs of mahogany, and thrown up on the shores of the island, are common, but that he had not been able to verify any of them. However, a few days previous to the date of the letter, while on a visit to one of the settlements, Mr. de Glauville (the rector) was shown the skin of an alligator eight feet long from tip to tip, which had been shot on shore a day or two before by a man whose name is given. Many logs of mahogany had been cast up on the shores of Inagua about that time; but the alligator had not been observed to land, and had been seen on shore several times before it was shot.

There seems, however, to be no reasonable doubt that the alligator was drifted by the current from the south-east to Inagua, on a log of mahogany, from San Domingo, the nearest place in which alligators are found. This means that it travelled a distance of from one hundred to one hundred and fifty miles. With regard to the occurrence of alligators on Andros, Catesby was a very accurate observer, and there seems to be no reason for doubting his statement. These alligators would appear to have been carried on drift-wood from the north-west coast of Cuba, a distance of three hundred miles, by the Gulf Stream, and cast on the edge of the Great Bahama Bank, whence local currents, aided by the wind, might have carried them to the west coast of Andros. The absence of traditions on the subject may be owing to the fact that the present inhabitants of Andros are principally descendants of persons who settled there at a period subsequent to Catesby's visit.

These instances of the dispersion of large animals by means of oceanic currents may be of interest to those of your readers who study the question of the geographical distribution of animals.

While on the subject of Andros, may I be allowed to mention two rather curious superstitions current among the inhabitants of that interesting island? The interior of the northern part of the island consists of swamps and lakes, interspersed with patches of rocky ground on which the Bahama pine (*P. bahamensis*) grows thickly. The negroes have a great dislike to entering these pine-woods alone, or even in small companies; for they say that a peculiar race of malevolent beings, called 'little people,' inhabit the trees. These creatures are said to be like tiny men covered with hair. They sit on the pine-boughs, and if a man notices them, and points them out to his companions, the whole party is rendered immovable for a day and a night; but, if fire is thrown at the 'little people,' they disappear without doing any harm.

The other superstition also relates to the pine-woods. Creatures like enormous hairy men, called by the negroes 'Yayhoos,' are said to march about the woods in 'schools,' the largest coming first; and 'when dey cotch you, dey wear you.' These beings are naturally much more dreaded than the 'little people.' It looks as if their name had been given by some traveller familiar with 'Gulliver's travels,' and struck with the resemblance between them and the terrible creatures of Swift's imagination.

Both of these superstitions would appear to be traditions of the land from which the negroes originally came. The 'little people' are probably a recollection of the small, arboreal monkeys, while the 'Yayhoos' represent the gorillas, of West Africa.

JOHN GARDINER.

Nassau, Bahamas, Sept. 17.

#### Earthquake sounds.

In answer to your correspondent who asks, in the last number of *Science*, for some explanation of the sounds which often precede and accompany an earthquake shock, I would offer the following brief statement, condensed from Mallet's discussion of accompanying tremors and sounds (Report on Neapolitan earthquake of 1857, vol. ii.): Considering a rent or fissure to form in rock and rapidly enlarge, its formation is commenced and ended by tremors of very small amplitude, while the waves of amplitude great enough to produce the ordinary effects of an earthquake shock cannot be generated till after the focal cavity is enlarged to a certain amount. Waves of sound probably accompany the rending of the entire fissure: if the velocity of inceptive rending be sufficient, the sound waves set out the earliest of all, and, travelling through solid rock with a far greater velocity than in air, often reach the ear before the tremors of the earthquake-wave itself are noticed. Thus an observer often first hears a low and distant rumbling, then feels the tremors before the shock, then the great *shove* of the shock itself, and, lastly, the tremors with which it departs along with the sound. The order of the phenomena must also depend largely upon the distance and form of the focal cavity; the inclination of its plane towards or away from the observer; and many other circumstances, such as the physical, geological, and topographical character of the intervening country.

It is extremely desirable that your correspondent,

and, indeed, any others who have any interest in the solution of the extremely intricate problems connected with the study of such phenomena, should send their observations to the U. S. geological survey. Very many observers who could easily give information which might be of great value when compared with other reports, often hesitate to do so because in itself it seems too vague or meagre to be worth the trouble.

EVERETT HAYDEN.

U. S. geological survey, Oct. 18.

#### Barometer exposure.

In connection with the recent discussion of barometer exposure, the following results of observations made during the high wind of Oct. 14 may be of interest. The barometers are kept in the transit-room, east wing, of the observatory, and windows at north and south were open at the top a foot or more, allowing free access of outside air.

At 7 o'clock A.M. the reduced barometer reading was 29.181 inches, the lowest for many months. At 10 o'clock, when the wind (directly from the west), as indicated by a Robinson's anemometer and Gibbon's recorder, suddenly increased from five to thirty miles per hour, the reduced height was 29.199; and a constant increase was observed for the remainder of the day, although the wind velocity was nearly constant for four hours.

I carefully examined the barometer (Green, No. 2006) for sudden changes in height, and was able repeatedly to detect and measure with the vernier oscillations of .02 of an inch, and at one time a movement of .029 of an inch. The majority of these oscillations did not last over 1.5 seconds; a few as long as 2 seconds.

It was noticed in nearly every instance that the oscillation did not follow immediately upon each gust of wind, but about five or six seconds later. It is possible that the situation of the east wing, sheltered by the main building and dome, may have influenced the result.

CHAS. A. BACON.

Beloit, Wis., Oct. 15.

#### A large squid.

The U. S. fish commission schooner Grampus, which recently arrived at Wood's Holl from a cruise to the eastern fishing-banks, brought in, among other things, a fine specimen of the large broad-finned squid, *Stenoteuthis megaptera*, Verrill. Although much smaller, this is next in size to the giant squids, and much larger than the common varieties. The one brought in by the Grampus is the first perfect specimen obtained in this country, and the second of its kind in the world. It is also slightly the largest, and, because it was taken alive, is probably the best preserved specimen extant.

The first known specimen was cast ashore near Cape Sable a number of years ago, and is now in the Provincial museum at Halifax. Since then four fragments of this species have been obtained by the Gloucester fishermen, and presented to the national museum, these consisting only of jaws and single arms. It therefore follows that the fine specimen of this animal which has now been secured by the fish commission will be a valuable acquisition to the collections in the national museum.

It was caught on a squid jig of the ordinary pattern, by John F. McDonald, one of the crew of the

schooner Mabel Leighton, of Gloucester, on the night of Sept. 25, while he was fishing for the common squid, *Ommastrephes illecebrosus*. At that time the vessel was off the southern part of Lee Have Bank, in north latitude 42° 45', and near the 64th meridian of west longitude. When fresh, the total length of the specimen was fifty-two inches from tip of tail to extremity of longest pair of tentacles, while its largest circumference was fifteen inches. The Halifax specimen was forty-three inches long from tip to tip, after having been in alcohol several days.

On the next day after the squid was caught, the Mabel Leighton met with the Grampus, and Captain Greenwood, of the former vessel, presented the animal to the officers of the fish commission schooner.

In this connection it is only just to remark that the Gloucester fishermen have exhibited a very intelligent interest in making collections for the commission. They are frequently able to detect peculiarities in unfamiliar species, and to save rarities. In consequence, their 'aids to science' have been of great value to many specialists in their study of the marine fauna off our coasts.

J. W. COLLINS.

Wood's Holl, Oct. 15.

#### Visual illusion.

In *Science*, No. 176, doubt is expressed concerning the visual illusion noticed by M. Charpentier before the French academy: "After a small, feebly illuminated object has been attentively viewed for some time in complete darkness, it will often appear to move in some determined direction in the field of vision, at a speed varying from two to three degrees per second, and sometimes through a distance subtended by an angle of thirty degrees or more." This illusion has been frequently noticed by me during the last fifteen or twenty years. The motion is usually vertically upward; occasionally the object seems to retrace its path, moving downward, but only after very attentive observation. Recently I have made repeated trials of this illusion, with exactly the same results as were obtained years ago, before I had made the eye a subject of special study.

A. H. COLE.

Hightstown, N.J., Oct. 16.

#### The significance of coincident weather-conditions.

On Oct. 14 there was an outbreak of violent storms in Europe and America. As was suggested in my letter published in *Science* for Aug. 13, such an event affords an opportunity to test the theory that there is a relation of some sort between disturbances on the sun and storms on the earth. If this relation does exist, the sun should be disturbed in proportion to the magnitude of these exceptional atmospheric movements. That this was the case on Oct. 14 is shown by the fact that on that day there was an extremely rapid formation of spot-groups in the sun's eastern quadrant. On Oct. 15 the number increased to such an extent that on the 16th the entire group was fairly comparable to that which was visible during the great storms in May. During the great gulf storm just previous to Oct. 14, there had been various solar disturbances which upon that date had disappeared, for the most part, by solar rotation.

M. A. VEEDER.

Lyons, N.Y., Oct. 16.